

What is claimed is:

1. A cardiopulmonary life support system comprising:
- a) a housing defined by a top side, a bottom side, and an inner periphery;
- 5 b) first and second tubes adjacent to each other in the housing, wherein the first and second tubes each have an input port and an output port; and
- c) an alternating member attached to the housing and disposed between the first and second tubes,
- 10 wherein the alternating member alternately squeezes the first and second tubes.
2. The life support system of claim 1 further comprising a solid tube support fitted between said each tube and the inner periphery of the housing.
- 15 3. The life support system of claim 2 wherein the alternating member is solid.
- 20 4. The life support system of claim 3 wherein the output port of the first tube passes through the top side and the output port of the second tube passes through the bottom side of the housing.
- 25 5. The life support system of claim 4 wherein the first and

second tubes are linearly aligned substantially parallel with each other.

5 6. The life support system of claim 5 wherein the first and second tubes are each formed of a flexible material.

7. The life support system of claim 6 wherein the first and second tubes are each formed of a polymer.

10 8. The life support system of claim 7 wherein the first and second tubes are silicon tubes.

15 9. The life support system of claim 8 wherein the first and second tubes are each elastically, substantially restored to its original shape after being squeezed by the alternating member.

10. A cardiopulmonary life support system comprising:
a) a housing defined by a top side, a bottom, a rear side, and an inner periphery;
20 b) first and second tubes adjacent to each other in the housing, wherein the first and second tubes each have an input port and an output port;
c) an alternating member attached to the housing and
25 disposed between the first and second tubes,

wherein the alternating member alternately
squeezes the first and second tubes; and

- d) a valve formed in said each input and output port
to prevent a reverse stream in the first and second
tubes.

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11. The life support system of claim 10 further comprising:

- a) a solid tube support fitted between said each tube
and the inner periphery of the housing; and
b) a shaft substantially parallel to the tubes,
wherein the shaft has a top portion rotatably
attached to the top side, a mid portion fixedly
attached to the alternating member, and a bottom
portion rotatably passing through the bottom side
of the housing, whereby an angular reciprocal
rotation of the shaft enables the alternating
member to alternately squeeze the first and second
tubes.

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12. The life support system of claim 11 further comprising:

- a) a motor adjacent to the housing;
b) a decelerator connected to the motor; and
c) a first gear having a gear base connected to the
decelerator, wherein the first gear is rotatably
connected to the shaft.

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13. The life support system of claim 12 further comprising
a second gear having a gear base attached to the bottom
portion of the shaft, wherein the second gear is
5 rotatably engaged to the first gear.

14. The life support system of claim 13 wherein a male spline
is fixed to the bottom portion of the shaft by a base
thereof, and a female spline is fixed to the second gear
10 base by a base thereof, wherein the male spline is
detachable engaged to the female spline.

15. The life support system of claim 10 wherein a support
plate extends from the mid portion of the shaft fixedly
15 to the alternating member to stabilize the angular
reciprocal rotation of the alternating member.

16. The life support system of claim 10 wherein the first
and second tubes are linearly aligned substantially
20 parallel with each other.

17. The life support system of claim 10 wherein the first
and second tubes are each elastically, substantially
restored to its original shape after being squeezed by
25 the alternating member.

18. The life support system of claim 10 wherein said each valve is a one-way valve to allow a single directional stream therethrough.

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19. The life support system of claim 10 wherein an initial squeezing of the alternating member on the first tube enables a blood to partially pump out from the first tube through the first tube output port, wherein a subsequent squeezing of the alternating member on the second tube enables the blood to partially pump out from the second tube through the second tube output port while a restoration of the first tube to its original shape enables the first tube to suck in as much as pumped out therefrom through the first input port valve, wherein a further subsequent squeezing of the alternating member on the first tube enables the blood to partially pump out from the first tube through the first tube output port while a subsequent restoration of the second tube to its original shaft enables the second tube to suck in as much as pumped out therefrom through the second input port valve.

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20. The life support system of claim 10 wherein the output port of the first tube passes through the top side and

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the output port of the second tube passes through the bottom side of the housing.

21. A cardiopulmonary life support system comprising:

- 5 a) a housing defined by a top side, a bottom, a rear side, and an inner periphery;
- b) first and second tubes adjacent to each other in the housing, wherein the first and second tubes each have an input port and an output port;
- 10 c) an alternating member attached to the housing and disposed between the first and second tubes, wherein the alternating member alternately squeezes the first and second tubes;
- 15 d) a valve formed in said each input and output port to prevent a reverse stream in the first and second tubes; and
- e) an oxygenator connected to the output port of the first tube and the input port of the second tube to convert an oxygen-depleted blood to an oxygen-rich blood.
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22. The life support system of claim 21 further comprising first and second blood storages, wherein the first blood storage is formed between the oxygenator and the input port of the first tube to temporarily store therein the

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oxygen-rich blood oxygenated in the oxygenator, wherein the second blood storage is connected to the output port of the second tube to temporarily store therein the oxygen-depleted blood.

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23. The life support system of claim 22 wherein an initial squeezing of the alternating member on the first tube enables the oxygen-rich blood to partially pump out from the first tube through the first tube output port, wherein a subsequent squeezing of the alternating member on the second tube enables the oxygen-depleted blood to partially pump out from the second tube through the second output port while a restoration of the first tube to its original shape enables the first tube to suck in as much as pumped out therefrom through the first input port valve, wherein a further subsequent squeezing of the alternating member on the first tube enables the oxygen-rich blood to partially pump out from the first tube through the first output port while a subsequent restoration of the second tube to its original shaft enables the second tube to suck in as much as pumped out therefrom through the second input port valve.

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24. The life support system of claim 22 further comprising:

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a) a solid tube support fitted between said each tube

and the inner periphery of the housing; and

- b) a shaft substantially parallel to the tubes,
wherein the shaft has a top portion rotatably
attached to the top side, a mid portion fixedly
attached to the alternating member, and a bottom
portion rotatably passing through the bottom side
of the housing, whereby an angular reciprocal
rotation of the shaft enables the alternating
member to alternately squeeze the first and second
tubes.

25. The life support system of claim 24 further comprising:

- a) a motor adjacent to the housing;
b) a decelerator connected to the motor; and
c) a first gear having a gear base connected to the
decelerator, wherein the first gear is rotatably
connected to the shaft.

26. The life support system of claim 25 further comprising

a second gear having a gear base attached to the bottom
portion of the shaft, wherein the second gear is
rotatably engaged to the first gear.

27. The life support system of claim 26 wherein a male spline
is fixed to the bottom portion of the shaft by a base

thereof, and a female spline is fixed to the second gear base by a base thereof, wherein the male spline is detachably engaged to the female spline.

5 28. The life support system of claim 27 wherein a support plate extends from the mid portion of the shaft fixedly to the alternating member to stabilize the angular reciprocal rotation of the alternating member.

10 29. The life support system of claim 28 wherein the first and second tubes are linearly aligned substantially parallel with each other.

15 30. The life support system of claim 29 wherein the first and second tubes are each elastically restored to its original shape after being squeezed by the alternating member.

20 31. The life support system of claim 30 wherein said each valve is a one-way valve to allow a single directional stream therethrough.

25 32. The life support system of claim 31 wherein the output port of the first tube passes through the top side and the output port of the second tube passes through the

bottom side of the housing.

- 5 33. The life support system of claim 21 wherein the first tube output port is to be connected to an aorta of a mammal body and the second tube input port is to be connected to a main vein of the mammal body, whereby the oxygen-depleted blood from the main vein is oxygenated and regularly pumped out into the aorta.

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